



## U.S. Army Corps of Engineers Buffalo District

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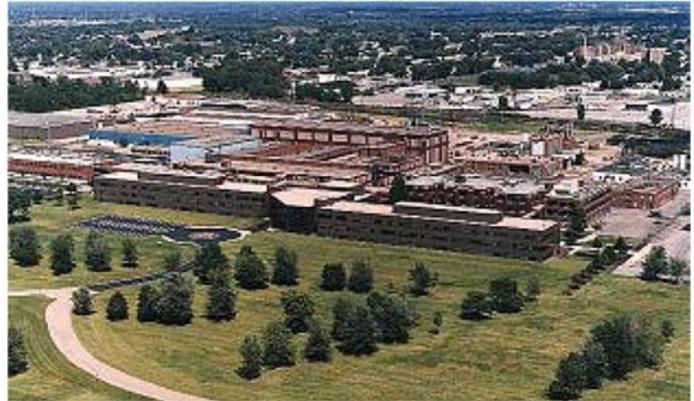
February 2016

### FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM

The Formerly Utilized Sites Remedial Action Program (FUSRAP) was initiated in 1974 to identify, investigate, and if necessary, clean up or control sites throughout the United States that were contaminated by activities related to the nation's early atomic energy program. Congress transferred execution of FUSRAP from the U.S. Department of Energy (DOE) to the U.S. Army Corps of Engineers in 1997. When implementing FUSRAP, the Corps of Engineers follows the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan.

### SITE DESCRIPTION

The Linde FUSRAP Site is located in the Town of Tonawanda, Erie County, New York, which is just north of the city of Buffalo. The 135-acre site, previously owned by the former Linde Division of Union Carbide, was used to process uranium ores under contract with the Manhattan Engineer District (MED) between 1942 and 1946. That activity resulted in portions of the property and buildings becoming contaminated with elevated levels of radionuclides (uranium, radium, and thorium). In the 1950's, Linde facilities were decontaminated and cleaned in compliance with health and safety guidelines applicable at that time. Some structures were demolished and many others were converted to other commercial uses.



*Linde FUSRAP Site*

The current site owner is Praxair, Inc. The corporation uses the Tonawanda facility as its worldwide research and development facility. More than 1,000 people are employed at the facility. Adjacent properties include an elementary school, residential areas, a public park and golf course, railroad tracks, and other industrial and commercial businesses.

### SITE HISTORY

Linde was designated as a FUSRAP site in February 1980. The DOE, successor to the MED and Atomic Energy Commission, conducted site investigations at Linde until the demolition and off-site disposal of Building 38 was completed in 1996.

Congress transferred the administration and execution of FUSRAP from the DOE to the Corps of Engineers in October 1997. The Corps of Engineers issued an action memorandum for the demolition and off-site disposal of Building 30 in February 1998.



*DOE Demolition of Building 38  
(circa 1996)*



*Corps of Engineers Dismantlement of Building 30  
(circa 1998)*

The Corps of Engineers issued a record of decision (ROD) for the remediation of residual radioactive material in soil and on surfaces of buildings and infrastructure with off-site disposal in March 2000. Building 14 (and its sub-slab soils) and site groundwater were excluded from the scope of the 2000 ROD. Remedial action and restoration of the soils and surfaces were completed in May 2013.

The Corps of Engineers issued a ROD for the removal and off-site disposal of Building 14 in April 2003. Remedial action was conducted between 2004 and 2005.



*Corps of Engineers Dismantlement of Building 14 (circa 2004)*



*Corps of Engineers Remediation of Contaminated Soil Lens (black) at Linde (circa 2010)*

The Corps of Engineers issued a no-action ROD for site groundwater in December 2006. No action was warranted for groundwater at Linde because there were no complete exposure pathways to the affected groundwater. Groundwater underlying Linde is not used for drinking water purposes. The nearby Niagara River is the water source for the Town of Tonawanda municipal water system.

Radiological constituents in the groundwater pose no current or future threat to human health or the environment. The no-action remedy also allowed for unrestricted use and unlimited exposure (UU/UE) conditions, since naturally occurring concentrations of constituents in groundwater underlying the Linde Site preclude its use without treatment and the treatment to remove the naturally occurring constituents would also remove any of the FUSRAP-eligible constituents that may be present.



*Former Groundwater-Monitoring Wells  
(circa 2014)*

All remaining groundwater-monitoring wells at the Linde Site were decommissioned in 2015.

#### REMEDIAL ACTION SUMMARY

Between 1996 and 2013, nearly 400,000 tons of radiologically contaminated soil and debris were safely removed from Linde and transported to permitted or licensed disposal facilities outside of New York State. Additionally, the Corps of Engineers reused or recycled approximately 60,000 tons of asphalt, concrete, metals, and soil.



*Linde Site circa 1998 (left); circa 2014 (right)*

All remedial action goals were achieved, and all applicable or relevant and appropriate requirements were met for the site. Residual uranium, radium and thorium in soil remaining at Linde are indistinguishable from average background levels. As such, cleanup goals in the 2000 ROD for soil were exceeded and the site is acceptable for UU/UE.

## SITE CLOSEOUT

The Corps of Engineers finalized the site closeout report for Linde on March 30, 2015. The site closeout report provides a consolidated record of all removal and remedial activities conducted at Linde between 1996 and 2013 and documents compliance with all statutory requirements.

The remedies implemented at Linde achieved the degree of cleanup and protection specified in the RODs and action memoranda for all pathways of exposure. No further response is needed to protect human health and the environment from the FUSRAP-eligible constituents of concern at Linde.

Since FUSRAP-eligible residual radiological concentrations remaining at Linde allow for UU/UE, no five-year reviews, land-use controls, or operations and maintenance are required to maintain the protectiveness of these implemented remedies.

The site closeout report is available on the web at:

<http://www.lrb.usace.army.mil/Missions/HTRW/FUSRAP/LindeSite.aspx> or by written request.

## WHAT'S NEXT?

Linde will be transferred from the Corps of Engineers to the USDOE Office of Legacy Management on March 30, 2017, for long-term stewardship, which is limited to records management and responding to stakeholder inquiries.

## ADMINISTRATIVE RECORD FILE

The administrative record file for Linde contains CERCLA-related documentation used in the decision-making process for the site. Reports and documents in the administrative record file may be viewed at the following locations:

### Paper Copy Only

Tonawanda Public Library  
333 Main Street  
Tonawanda, NY 14150

U.S. Army Corps of Engineers  
FUSRAP Public Information Center  
1776 Niagara Street  
Buffalo, New York 14207  
(by appointment 800-833-6390 Option 4)

The Corps of Engineers will retain these administrative record file repositories until Linde is officially transferred on March 30, 2017, after which the USDOE Office of Legacy Management (<http://energy.gov/lm/office-legacy-management>) will be responsible for records management and responding to stakeholder inquiries for this site.

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